

WHAT IS CLAIMED IS:

1 1. A method comprising:

2 determining at least one queue parameter for a
3 process running on a system; and

4 configuring one or more queues on a storage device
5 in accordance with the at least one queue parameter.

1 2. The method of claim 1 wherein said configuring one or
2 more queues includes specifying a next read address indicative
3 of the memory location within the storage device from which
4 the next queue object requested from the queue is to be read.

1 3. The method of claim 1 wherein said configuring one or
2 more queues includes specifying a next write address
3 indicative of the memory location within the storage device to
4 which the next queue object provided to the queue is to be
5 written.

1 4. The method of claim 1 wherein said configuring one or
2 more queues includes providing a queue status flag, which is
3 indicative of an operational condition of the queue.

1 5. The method of claim 1 wherein said configuring one or
2 more queues includes specifying a starting address for the
3 queue.

1 6. The method of claim 1 wherein the at least one queue
2 parameter includes a queue depth parameter and said
3 configuring one or more queues includes configuring the queue
4 in accordance with the queue depth parameter.

1 7. The method of claim 1 wherein the at least one queue
2 parameter includes a queue entry size parameter and said
3 configuring one or more queues includes configuring the queue
4 in accordance with the queue entry size parameter.

正四面體圖解

1 8. A system comprising:

2 a host processor configured to determine at least
3 one queue parameter for a process running on said system;
4 a storage device; and
5 a queue management process configured to configure
6 one or more queues on said storage device in accordance
7 with said at least one queue parameter.

1 9. The system of claim 8 wherein said queue management
2 process includes a read pointer process for each queue
3 configured by said queue management process, wherein said read
4 pointer process is configured to specify a next read address
5 indicative of the memory location within said storage device
6 from which the next queue object requested from said queue is
7 to be read.

1 10. The system of claim 8 wherein said queue management
2 process includes a write pointer process for each queue
3 configured by said queue management process, wherein said
4 write pointer process is configured to specify a next write
5 address indicative of the memory location within said storage
6 device to which the next queue object provided to said queue
7 is to be written.

1 11. The system of claim 8 further comprising at least one
2 slave processor.

1 12. The system of claim 11 wherein said slave processor
2 comprises a programmable state machine.

1 13. The system of claim 11 further comprising a data bus for
2 connecting said host and slave processors, wherein said data
3 bus transfers queue objects between said processors.

1 14. The system of claim 11 further comprising a flag bus for
2 connecting said host and slave processors.

1 15. The system of claim 14 wherein said queue management
2 process includes a queue status monitoring process for each
3 queue configured by said queue management process, wherein
4 said queue status monitoring process provides a queue status
5 flag, which is indicative of an operational condition of said
6 queue, on said flag bus.

1 16. The system of claim 15 wherein said queue status flag is
2 configured to indicate at least one of:

- 3 an empty queue condition;
- 4 a nearly empty queue condition;
- 5 a nearly full queue condition; and
- 6 a full queue condition.

1 17. The system of claim 8 wherein said queue management
2 process includes a queue base address process for each queue
3 configured by said queue management process, wherein said
4 queue base address process specifies a starting address for
5 said queue.

1 18. The system of claim 8 wherein said at least one queue
2 parameter includes a queue depth parameter and said queue
3 management process includes a queue depth specification
4 process for each queue configured by said queue management

5 process, wherein said queue depth specification process
6 configures said queue in accordance with said queue depth
7 parameter.

1 19. The system of claim 8 wherein said at least one queue
2 parameter includes a queue entry size parameter and said queue
3 management process includes a queue entry size specification
4 process for each queue configured by said queue management
5 process, wherein said queue entry size specification process
6 configures said queue in accordance with said queue entry size
7 parameter.

1 20. The system of claim 8 wherein said storage device
2 comprises an SRAM storage device.

1 21. The system of claim 8 wherein said one or more queues
2 temporarily store queue objects and said queue objects include
3 at least one of:
4 a data packet; and
5 a system command.

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1 22. A computer program product residing on a computer
2 readable medium having instructions stored thereon that, when
3 executed by the processor, cause that processor to:

4 determine at least one queue parameter for a process
5 running on a system; and

6 configure one or more queues on a storage device in
7 accordance with the at least one queue parameter.

1 23. The computer program product of claim 22 wherein said
2 computer readable medium comprises a read-only memory.

1 24. The computer program product of claim 22 wherein said
2 computer readable medium comprises a hard disk drive.

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1 25. A queue management process for configuring one or more
2 queues, comprising:

3 a queue base address process for specifying a
4 starting address for each of said one or more queues
5 required by a process running on a system; and

6 a queue depth specification process for configuring
7 each said queue in accordance with a queue depth
8 parameter provided by said process running on said
9 system.

1 26. The queue management process of claim 25 further
2 comprising:

3 a queue entry size specification process for
4 configuring each said queue in accordance with a queue
5 entry size parameter provided by said process running on
6 said system.

1 27. A queue management process for configuring one or more
2 queues, comprising:

3 a queue base address process for specifying a
4 starting address for each of said one or more queues
5 required by a process running on a system; and

6 a queue entry size specification process for
7 configuring each said queue in accordance with a queue
8 entry size parameter provided by said process running on
9 said system.

1 28. The queue management process of claim 27 further
2 comprising:

3 a queue depth specification process for configuring
4 each said queue in accordance with a queue depth
5 parameter provided by said process running on said
6 system.

1 29. A queue management process for configuring one or more
2 queues, comprising:

3 a queue base address process for specifying a
4 starting address for each of said one or more queues
5 required by a process running on a system; and

6 a queue status monitoring process for providing, for
7 each said queue, a queue status flag that is indicative
8 of the operational condition of said queue.

1 30. The queue management process of claim 29 wherein said
2 queue status flag is configured to indicate at least one of:

3 an empty queue condition;
4 a nearly empty queue condition;
5 a nearly full queue condition; and
6 a full queue condition.